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THE
DAIRY INDUSTRY
OF CANADA

By J. A. RUDDICK
Dairy Commissioner



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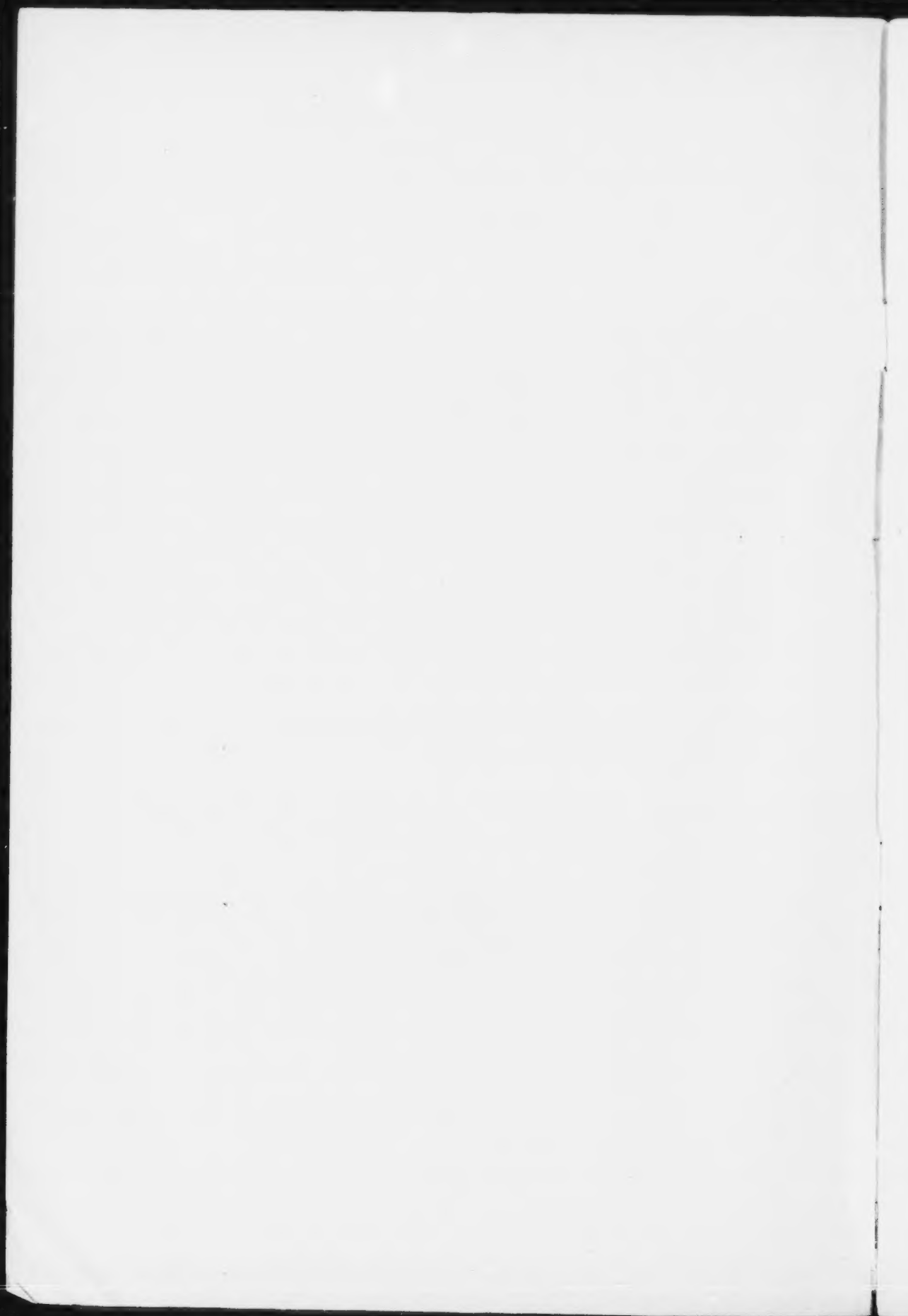
BY

J. A. Ruddick, Dairy Commissioner



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THE DAIRYING INDUSTRY IN CANADA.

BY

J. A. RUDDICK, Dairy Commissioner.

HISTORICAL.

Dairying is one of the oldest and most important of the Canadian industries. It dates back to the very earliest settlement. Champlain, the founder of Quebec, appears to have had a small herd of cows in 1610. The original stock of milch cows were brought by Champlain from Brittany and Normandy, and these were augmented by further importations from the same source in 1665. Lord Dalhousie, when Governor of Nova Scotia in 1821, imported cattle from Ayrshire, Scotland, into that province; and afterwards, as Governor of Canada, he encouraged the improvement of stock in the province of Quebec in the same manner. During the early days of British immigration Scotch shipmasters brought out cows from Ayrshire to supply milk for passengers on the voyage and then sold them at Quebec and Montreal. Importations of Ayrshire cattle were made by enterprising breeders in 1845, 1850, and 1853. The Jersey breed was introduced in 1868, and some very celebrated herds were established during the eighties. The first importation of Guernseys was in 1878, followed by others in 1881 and 1883. The Holstein breed was imported into Ontario from the United States in 1882 and 1883, and now the black and white cattle are to be seen in every district.

A few cows were brought to the Red River settlement by the Selkirk settlers in 1813, and in 1823 a herd of 300 cattle were driven up from the United States and disposed of to the Red River colonists. The Hudson's Bay Company had cows at some of their posts in the northern interior of British Columbia as early as 1837, which were presumably driven over the mountains from the prairies. In 1843, when the Hudson's Bay Company established Fort Victoria, on Vancouver island, they brought a herd of cattle from their farms on Puget sound. The original stock was obtained from the Mission Fathers in California.

Thus was the foundation laid for the herds of this country.

THE EXISTING HERDS.

At the present time there are many fine herds of pure-bred dairy cows in all parts of Canada, with Holsteins and Ayrshires predominating. A number of world's records have been established by Canadian cows. The total number of milch cows in Canada by provinces in 1919, was estimated as follows:—

TABLE I.
MILCH COWS IN CANADA.
(Dominion Bureau of Statistics.)

Province.	
Prince Edward Island.....	45,662
Nova Scotia.....	162,230
New Brunswick.....	153,058
Quebec.....	1,056,347
Ontario.....	1,140,016
Manitoba.....	227,872
Saskatchewan.....	374,062
Alberta.....	336,596
British Columbia.....	51,594
Total.....	3,547,437

The number of milch cows as shown by the decennial census of 1911 was 2,594,179; therefore the 1919 figures show an increase of 953,258 cows in eight years.

The annual percentage increase in the production of milk is largest in the Prairie Provinces at the present time.

DAIRY MANUFACTURES.

In the early days settlers kept cows largely to supply the needs of their own families in milk, butter, and cheese. As the years went on and the number of non-producers increased, a market was found for an increasing quantity of butter, which was made on the farms, but it was not until the co-operative, or semi-co-operative, system of factories was established that dairy produce began to figure in the commerce of the country.

The first attempt at handling milk co-operatively was the establishment of a cheese factory in Oxford county, Ontario, in 1864. Another cheese factory was established in the province of Quebec in 1865, and from that time on the number increased rapidly.

The first creamery was organized in the province of Quebec in 1873, and it was a dairyman in the province of Quebec who used the first centrifugal cream separator on the American continent, in a creamery which was established in the village of Ste. Marie, Beauce county.

At the present time cheese factories and creameries are established in every province of Canada as follows:—

TABLE II.

Province.	Cheese Factories.	Creameries.	Combined Factories.
Western Ontario.....	104	127	30
Eastern Ontario.....	806	43	11
Northern Ontario.....	18	2	1
Quebec.....	890	559	536
British Columbia.....	2	25	2
Alberta.....	7	52	14
Saskatchewan.....	—	24	—
Manitoba.....	26	41	—
New Brunswick.....	24	18	1
Nova Scotia.....	3	22	—
Prince Edward Island.....	15	11	15
Totals.....	1,895	924	610

The cheese factories soon became very popular and the quantity of cheese now made on farms is negligible. The factory plan relieves the farmer's household of much heavy labour, and permits of a much larger number of cows being kept on the average farm. A skilled cheese or buttermaker, as the case may be, is employed, and the result is greater uniformity in quality and packing, and, speaking generally, a very much higher standard of quality. By handling comparatively large quantities of milk at one place the total labour is reduced by the employment of machinery and steam power. Important advantages are also gained in the marketing of the product.

Briefly, the organization of the factory is as follows: It may be owned by an individual or firm, who receives the milk, manufactures the cheese, supplying all labour and materials, charging a fixed rate per pound; or it may be owned by the milk producers themselves and operated on a co-operative basis. Both plans are followed. In either case the cheese or butter is sold as one lot and the

proceeds divided pro rata among the milk suppliers. The number of suppliers for each factory may vary from 50 to 100 or even more. Of late years what is known as the "centralized" creamery has been developed quite extensively. These creameries are located in the larger towns and cities and the cream is shipped in by railway from farms in the surrounding country any distance up to 200 miles or more. Some of these creameries have several thousand cream suppliers. The largest creamery in Canada is of this type, and is located at Edmonton, Alta. What is said to be the next largest is operated by the T. Eaton Company in their mammoth departmental store at Toronto, Ont.

The manufacture of butter is not so generally monopolized by the creameries as the manufacture of cheese is by the cheese factories. Those farmers who are so situated as to be unable to supply milk to a factory of any kind, make butter on the farm, rather than cheese, and the quantity of dairy butter manufactured is considerably in excess of the quantity consumed by the farmers' families. This surplus is disposed of very often by barter at the country stores. Individual farm buttermakers, who have acquired a good reputation, frequently have special customers among the consumers, whom they supply direct at good prices.

Cheese factories and creameries have been established in all the provinces of Canada, except that there are no cheese factories in Saskatchewan.

CONDENSED MILK.

The first condensed milk factory in Canada was established at Truro, N.S., in 1883, followed by others, chiefly in the county of Oxford, Ontario. The condensed milk industry received a considerable impetus during the war, and factories are now located as follows:—

MILK CONDENSARIES IN CANADA.

Name of Firm and Address.	Plants at
Borden Co., Ltd., 180 St. Paul St. W., Montreal, Que.....	Truro, N.S. Huntingdon, Que. Norwich, Ont. Ingersoll, Ont. Tillsonburg, Ont. South Sumas, B.C. (closed).
Carnation Milk Products Co., Ltd., Bank of Hamilton Building, Hamilton, Ont.....	Aylmer, Ont. Springfield, Ont. Brockville, Ont.
Laing Produce and Storage Co., Ltd., Brockville, Ont.....	Brockville, Ont.
Malcolm Condensing Co., Ltd., St. George, Ont.....	St. George, Ont.
Maple Leaf Condensing Co., Ltd., Chesterville, Ont.....	Chesterville, Ont.
Crescent Pure Milk Condensing Co., Ltd., Winnipeg, Man.....	Winnipeg, Man.
Pacific Milk Company, Ltd., Ladner, B.C.....	Ladner, B.C. Courtenay, B.C.
Ottawa Dairy, Ltd., Ottawa, Ont.....	Ottawa, Ont.
Peterboro Pure Milk Products Co., Ltd., Peterboro, Ont.....	Peterboro, Ont.
Toronto City Dairy, Spadina Crescent, Toronto, Ont.....	Woodstock, Ont.
Charlottetown Condensed Milk Co., Charlottetown, P.E.I.....	Charlottetown, P.E.I.
Courtenay Milk Condensing Co., Ltd., Courtenay, B.C.....	Courtenay, B.C.
Bowes Co., Ltd., 74 Front St. E., Toronto, Ont.....	Sydenham, Ont.

In the early nineties a factory was established in Oxford county, Ontario, for the manufacture of milk powder, and this industry has shown considerable

expansion of late years, following improvements in the methods of manufacture, which have improved the quality of the article.

Milk powder factories are now located as follows:—

MILK POWDER PLANTS IN CANADA.

Name of Firm and Address.	Plants at	Receiving Stations.
Canadian Milk Products, Ltd., 10 St. Patrick St., Toronto, Ont.	Brownsville, Ont....	Verschoyle, Ont.
	Belmont, Ont.....	Corinth, Ont.
		Harrietsville, Ont.
		Nilestown, Ont.
		Westminster, Ont.
		Gladstone, Ont.
	Burford, Ont.....	Mapleton, Ont.
		New Durham, Ont.
	Hickson, Ont.....	Ratho, Ont.
	Glanworth, Ont.	Brooksdales, Ont.
	Russell, Ont.	
Wm. Neilson, Ltd., 277 Gladstone Ave., Toronto, Ont.....	Beachville, Ont.	
Willard's Chocolates, Ltd., 260 Spadina Ave., Toronto, Ont...	Pictou, Ont.	

SOME DETAILS OF DAIRY PRODUCTION IN CANADA.

TABLE III.

SHOWING QUANTITIES AND VALUES OF DIFFERENT DAIRY PRODUCTS IN 1919.

Products.		Quantities.	Values.
			\$
Cheese.....	Lb.	167,734,982	44,805,794
Creamery butter.....	"	101,554,131	55,182,422
Dairy butter.....	"	125,000,000	56,250,000
Whey butter.....	"	1,396,814	661,373
Condensed and evaporated milk.....	"	78,006,237	11,214,165
Milk powder.....	"	6,591,099	1,539,272
Sterilized milk.....	"	7,460,400	852,080
Condensed skim-milk.....	"	494,973	32,921
Casein.....	"	199,013	32,588
Ice-cream.....	Gals.	2,892,974	3,715,488
Cream.....	Lb. B. Fat	6,380,727	4,718,678
Whey cream.....			521,426
Milk, used as milk.....			72,000,000
Total.....			\$251,526,201

"Dairy butter" and "milk, used as milk" are estimated. All other figures are from the Dominion Bureau of Statistics. Cheese shows a decrease of 7,143,431 pounds as compared with 1918, and of 16,152,855 pounds, compared with 1915. On the other hand creamery butter shows an increase of 8,287,255 pounds over 1918, and 17,562,678 pounds over 1915. If cheese and creamery butter are taken together, there is a net increase in production in 1919 over both 1915 and 1918.

Figures of the production of condensed and evaporated milk and milk powder are not available for 1915, but it is well known that the increase during the war period was very large. The production of condensed and evaporated milk in 1919 shows a decrease of 1,306,339 pounds compared with 1918. Milk powder produced in 1919 shows an increase of 1,060,184 pounds over 1918.

The following comparative statement as to the total number of patrons of all dairy factories during the years 1915 to 1918 corroborates the view that dairy production on the whole continues to show a steady increase year by year.

TABLE IV.
NUMBER OF PATRONS OF ALL DAIRY FACTORIES IN CANADA.

Province.	1915.	1916.	1917.	1918.
Prince Edward Island.....	3,999	3,733	3,837	3,728
Nova Scotia.....	2,972	3,891	4,502	4,345
New Brunswick.....	1,891	1,861	1,861	2,153
Quebec.....	84,643	79,145	81,784	80,011
Ontario.....	78,070	87,325	96,255	92,397
Manitoba.....	12,300	13,000	21,748	26,867
Saskatchewan.....	11,200	12,300	14,389	16,430
Alberta.....	16,411	18,236	22,473	23,911
British Columbia.....	1,441	1,701	2,034	2,574
Totals.....	212,927	221,192	248,683	252,416

TABLE V.
PRODUCTION OF CREAMERY BUTTER IN CANADA BY PROVINCES IN THE CALENDAR YEARS 1910, 1915, 1916, 1917, 1918 AND 1919.

Province.	1910.	1915.	1916.	1917.	1918.	1919.
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Prince Edward Island.....	670,908	539,516	613,880	597,271	641,754	937,518
Nova Scotia.....	354,785	1,240,483	1,586,679	1,746,662	1,756,905	2,093,804
New Brunswick.....	840,633	776,416	709,932	565,699	660,010	915,816
Quebec.....	41,782,678	36,621,491	34,323,275	34,392,562	36,761,057	35,409,837
Ontario.....	13,876,888	26,414,120	24,680,109	28,714,352	29,397,485	31,900,000
Manitoba.....	2,050,487	5,839,667	6,574,510	7,050,921	8,436,962	8,256,711
Saskatchewan.....	1,548,696	3,811,014	4,310,669	4,220,758	5,009,014	6,600,000
Alberta.....	2,149,121	7,544,148	8,521,784	8,943,971	9,021,765	10,500,000
British Columbia.....	1,206,202	1,204,598	1,243,292	1,294,743	1,581,924	2,290,000
Total.....	64,489,398	83,991,453	82,564,130	87,526,939	93,266,876	98,903,686

TABLE VI.
PRODUCTION OF FACTORY CHEESE IN CANADA BY PROVINCES IN THE CALENDAR YEARS 1910, 1915, 1916, 1917, 1918 AND 1919.

Province.	1910.	1915.	1916.	1917.	1918.	1919.
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Prince Edward Island.....	3,293,755	2,260,000	2,121,736	2,234,985	2,201,368	2,502,449
Nova Scotia.....	264,243	125,580	94,727	67,497	61,195	47,360
New Brunswick.....	1,166,243	1,165,651	1,185,664	1,244,106	1,185,225	1,256,388
Quebec.....	58,171,091	54,217,113	61,906,750	67,835,017	62,079,162	59,170,681
Ontario.....	136,093,951	125,001,136	126,015,870	121,173,086	107,886,724	103,700,000
Manitoba.....	694,713	726,725	880,728	1,003,646	657,585	679,855
Saskatchewan.....	26,780	.....	.....	.....	13,573	.....
Alberta.....	193,497	381,632	745,122	1,274,905	552,834	500,000
British Columbia.....	.....	10,000	18,000	71,094	249,647	250,500
Total.....	199,904,223	183,887,837	192,968,597	194,904,336	174,878,313	167,107,233

It will be seen by reference to Tables I, II, V, and VI, that Ontario and Quebec are the leading provinces in the production of milk and its products. There is, however, a well developed dairy industry in Prince Edward Island, and the manufacture of cheese, creamery butter and condensed milk are important items of agricultural production in that province. New creameries are being organized and the production of creamery butter is increasing steadily in both Nova Scotia and New Brunswick. These three provinces offer an excellent field for the further development of the dairying industry. In the four western provinces there is a steady development of the creamery butter-making industry, especially in the Prairie Provinces.

In all probability the greatest expansion of the dairying industry in Canada during the next twenty years will take place in Manitoba, Saskatchewan, and Alberta, where almost unlimited areas, yet unoccupied or devoted entirely to grain growing, are well adapted for the production of milk. The industry in these provinces has received an excellent start, and the butter produced in the creameries is of the very highest quality. A feature of the butter made on the prairies is its excellent keeping quality—a very important consideration now that there is a surplus in these provinces for export. Table VII shows the development of the creamery industry in the western provinces during recent years.

TABLE VII.
CREAMERY BUTTER PRODUCTION IN WESTERN PROVINCES.

Province.	1900.	1910.	1915.	1918.	*1919.
	Lb.	Lb.	Lb.	Lb.	Lb.
Manitoba.....	1,557,010	2,050,487	5,839,667	8,436,962	8,256,711
Saskatchewan.....	339,014	1,548,696	3,811,014	5,009,014	6,600,000
Alberta.....	407,970	2,149,121	3,221,964	9,021,765	10,500,000
British Columbia.....	395,808	1,206,202	1,204,598	1,581,924	1,600,000
Totals.....	2,699,802	6,954,506	14,077,243	24,049,665	26,956,711

*Estimated for 1919.

There has, of course, been a large increase at the same time in the production of dairy butter, in milk used for direct consumption in the growing towns and cities, and in the manufacture of ice-cream, etc. In 1918 the country east of the Great Lakes produced 74.3 per cent of the creamery butter, leaving 25.7 per cent for the provinces west of the lakes. In the same year Ontario produced 61 per cent and Quebec 36 per cent of the total cheese output.

Table V shows that the production of creamery butter increases year by year throughout the whole of Canada. As regards cheese, there was an important increase during the first two years of the war, but during the seasons of 1918 and 1919 the production fell off again, owing to the diversion of milk to milk condensaries, milk powder factories, for the manufacture of ice cream, and direct consumption in the towns and cities. Notwithstanding the decrease in 1918 and 1919 the production of cheese is still larger than it was in 1913 and 1914, in which years cheese production reached its lowest point since 1893.

The production of condensed milk, which expanded greatly during the war, has now probably reached the maximum for the time being, but there is reason to believe that there may be a further increase in the production of milk powder.

The diversity in the dairying industry in Canada is such that producers practically everywhere have a choice of markets and are able to turn their milk into the channel which provides the best return. The factory system will

prevail in all districts where there is a sufficient quantity of milk produced to make the operation of a factory financially possible. It requires the milk of at least 400 cows to permit of a cheese factory or a creamery being operated on a profitable basis. In a new district, until the number of cows reaches the required minimum for the support of a local factory, butter can be made on the farm, or the cream may be shipped to a "centralized" creamery.

GOVERNMENT AID TO THE DAIRYING INDUSTRY.

The Governments of Canada, both Federal and Provincial, have rendered, and are still rendering, much assistance to the dairying industry. The Dairy Branch of the Federal Department of Agriculture employs a staff of experts, who aim to promote improvement in dairy manufactures, who study and demonstrate new processes, and generally assist by correlating and co-ordinating the work of the different provinces in every movement which tends towards the improvement of the dairying industry. Among other activities, the Dairy Branch encourages the testing of individual cows. This is done by propaganda and by financial assistance in the making of milk tests and the keeping of the records.

A large cheese factory and creamery is conducted by the Federal Dairy Branch, where experiments are carried out and problems relating to the manufacture of cheese and butter are studied as carefully as possible.

The Dairy Branch also supervises the transportation and marketing of dairy products; publishes a Market Report, which is sent free to any person who applies for it; issues a Monthly Dairy News Letter, and special bulletins and circulars on various subjects as occasion arises. The Dairy Commissioner and his assistants attend and address many meetings, and give information and advice by letter to any person who may apply for it.

The Provincial Departments of Agriculture maintain dairy schools, and field instructors who travel among the creameries and cheese factories for the purpose of giving instruction and advice, and to assist butter and cheesemakers. The travelling instructors visit the factories regularly during the season of operation.

EXPORTS OF DAIRY PRODUCTS FROM CANADA.

Small quantities of butter and cheese have been exported from Canada for many years, but it was not until after the establishment of the factory system in 1864 that the volume of dairy exports began to bulk prominently in the export trade of Canada. The exports reached a maximum of 34,128,944 pounds of butter in 1903, and 233,980,716 pounds of cheese in 1904. After these years the home consumption, due to growth of population and increased purchasing power of the people, reduced the surplus for export. In 1913 only 828,323 pounds of butter were exported, and in 1915 the exports of cheese fell to 137,601,661 pounds. All figures of exports are for the fiscal year, which ends on March 31, and therefore represent the production of the previous season. Since 1913 the increase in production has exceeded the growth of the home consumption, and therefore the total exports are again on the increase, although there is some change in the relative quantities of different products.

Table VIII gives the quantities and values of dairy products exported in the years 1911 to 1920 inclusive.

TABLE VIII.
EXPORTS OF DAIRY PRODUCTS FROM CANADA.
(Fiscal Years ending March 31.)

Year.	Butter.		Cheese.		Condensed and Evaporated Milk.		Fresh Cream.		Fresh Milk.		Casein.	
	Lbs.	\$	Lbs.	\$	Lbs.	\$	Gals.	\$	Gals.	\$	Lbs.	\$
1911.....	3,142,982	744,288	181,895,724	20,739,507	6,584,828	469,406	1,823,821	1,714,528	39,775	4,276	1,515,172	37,009
1912.....	8,844,402	2,077,916	163,430,684	20,888,818	4,389,350	305,678	886,266	792,687	7,771	975	1,021,197	38,302
1913.....	828,323	223,578	155,216,392	20,697,144	335,849	25,554	820,360	751,123	7,939	1,412	349,805	13,342
1914.....	1,228,753	309,046	144,478,340	18,868,785	9,339,382	666,941	1,323,929	1,289,680	307,188	47,645	270,486	11,071
1915.....	2,724,913	639,625	137,601,661	19,213,501	18,355,975	1,181,300	1,895,575	1,836,006	477,692	68,295	230,045	13,423
1916.....	3,441,183	1,018,769	168,961,583	26,690,500	13,247,834	770,566	1,262,280	1,131,832	394,831	59,028	50,564	3,282
1917.....	7,990,435	2,491,992	180,733,426	36,721,136	15,858,622	1,371,610	803,498	777,771	760,805	130,492	50,588	5,196
1918.....	4,926,154	2,090,467	169,530,753	36,602,504	43,656,718	4,955,048	585,601	666,401	1,116,362	241,527	16,200	2,634
1919.....	13,659,157	6,140,864	152,207,037	35,223,983	50,786,856	7,035,297	485,015	620,725	827,973	226,777		
1920.....	17,612,603	9,844,359	126,395,777	36,336,863	54,247,498	8,517,771	795,780	1,122,424	1,985,113	576,666		

SUMMARY

Showing Total Value of all Dairy Products Exported for Years ended March 31, 1911 to 1920 Inclusive.

Year.	Value.		Year.		Value.		Year.		Value.	
1911.....	\$23,709,014		1915.....		22,952,560		1919.....		\$49,247,646	
1912.....	24,104,376		1916.....		29,673,977		1920.....		56,398,083	
1913.....	21,714,153		1917.....		41,498,197					
1914.....	21,193,168		1918.....		44,468,581					

The apparent large decrease in the exports of cheese for 1920 is due to the fact that over 16,000,060 pounds of cheese were held in Montreal for account of the British Ministry of Food on March 31 of that year. On the same date of previous years all the surplus had been exported. There will be a corresponding increase in the exports for the fiscal year ending March 31, 1921.

OTTAWA, June 23, 1920.